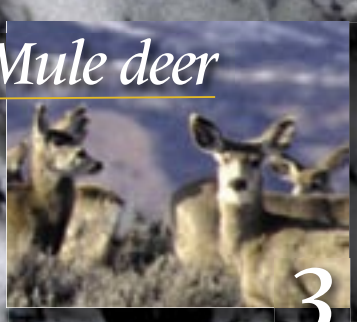
CHANGES TO THE DEDICATED HUNTER PROGRAM

UTAH DIVISION OF WILDLIFE RESOURCES • WINTER 2004-2005

wildlife REVIEW

Habitat Annual Report



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Inside

WINTER 2004–2005

FAREWELL TO A FRIEND

KEVIN CONWAY, Director of the Utah Division of Wildlife Resources, died recently after a long and valiant battle against cancer. Kevin was a loving husband and father and a devoted family man. He loved baseball and was an avid Cubs fan. His familiar parting shot during the season was, "root for the Cubs to win the Series." His friends all said he was a glutton for punishment.

Kevin was an impressive man, tall and raw-boned, who took a big stride on the land. The Division was his life's work—his calling. He was smart, strong, fair, outspoken, mischievous, passionate, sometimes loud, unique. He was a born leader and a visionary who charged head-on at the greatest challenges facing wildlife in Utah.

Kevin Conway

Kevin didn't think small. He had big ideas—very big. His greatest legacy will be the Habitat Initiative. It is a bold and innovative project to restore hundreds of thousands of acres of sagebrush-steppe wildlife habitat. It is the largest and most ambitious such undertaking in the history of western America. Only a man like Kevin could have made it happen.

To get where he needed to be, he wasn't afraid to fight. Sometimes he shot from the hip, but his aim was usually true. His bottom line: "do the best job for wildlife and remember the people who made it possible—Utah's half million loyal hunters and anglers. Do well by them. Fight for them. Yet, at the same time, realize the need to bring more people to the dance: the wildlife watchers, backpackers, bikers. Teach them all to respect and value wildlife, and help them find a way to pay their fair share to conserve and protect the resource."

Now he is gone and, for a moment, the world has become too quiet. Words really can't explain how he will be missed. He touched so many, did so much. As Director, he was a real straight shooter. He was sometimes tough, but always honest and ethical. You always knew where you stood with Kevin. For the employees of the Division, it will be hard standing without him.

How should we remember and honor Kevin Conway? There are the formalities, of course. But when all the ceremonies are done, all the columns written, all the tributes paid, what then? Maybe a walk in the woods—try to scare up a few grouse. Maybe crouch in a duck blind at dawn with your best friends and a dog (his favorite thing to do), whispering, waiting for the morning flight. Maybe sit silently along a stream at sunset, watching the trout rise, waiting for the deer to come to water. And there, in the stillness, reflect and remember a great man.

One more thing: root for the Cubs to win the Series.

"Do the best job for wildlife and remember the people who made it possible—Utah's half million loyal hunters and anglers."

— Kevin Conway

BY BRENT STETTLER
CONSERVATION OUTREACH MANAGER, SOUTHEASTERN REGION

MULE DEER

Hunting & management

Changing conditions and perspectives

THE "GOOD OLE' DAYS" are gone and, in many cases, nearly forgotten. Old timers with memories of deer hunting in the 1950s and 1960s are getting older. Our hunting youth, who listen to grandpa talk about his post World War II hunts, may have a hard time believing what they're hearing. After all, a trophy mule deer doesn't seem all that common anymore.

Wildlife professionals, too, are scratching their heads about the decline of mule deer in the western United States. In 1998, the Western Association of Fish and Wildlife Agencies (WAFWA), an organization representing 17 states and four Canadian provinces, launched an investigation to discover the cause of the decline.

For decades, the mule deer has been the "bread and butter" of state agency budgets. Anymore, that butter is being spread pretty thin. In many instances, a game agency's public approval and economic well being hang on the fate of mule deer in its state. In many cases, that tie is becoming threadbare.

At the 1998 WAFWA conference, The Mule Deer Working Group was established to identify and solve common management problems, and to increase cooperation in mule deer research among the various agencies. The group has produced two important publications.

The first, *Mule Deer: Changing Landscapes, Changing Perspectives* is a series of non-technical articles based on technical papers from the book, *Mule Deer in the West—The View in 2002.* This publication was produced and edited by Creative Resource Strategies, West Linn, Oregon.

The second publication, a book titled *Mule Deer Conservation: Issues and Management Strategies,* was edited by James C. deVos, Jr., Michael R. Conover and Nevelyn Headrick, and published by the Jack H. Berryman Institute Press, Utah State University, in 2003. The book may be ordered by writing Jack H. Berryman Institute Press, Utah State University, 5270 Old Main Hill, Logan, Utah 84322-5270.

My purpose in writing an article about the changing face of mule deer hunting and management is to encourage readers to obtain copies of these publications, which will help them understand the changing dynamic of mule deer management better than I could ever do.

As hunters gather at hunting camp every fall, countless mule deer management theories are bantered

It's no secret that finding trophy mule deer is harder than in the past.

Mule deer herds are in decline throughout their ranges in Utah, and no single theory accounts for the loss.

back and forth across the campfire. One thing is certain. The problems are serious and complicated. Mule deer are in decline throughout their range. No single theory accounts for the loss. The answers are difficult and elusive. The Mule Deer Working Group's publications shed as much light on the controversy as is currently available.

The following is a brief introduction to the issues identified by The Mule Deer Working Group:

HABITAT

The elementary definition of food, water, shelter and space, all in a suitable arrangement, offers a graduate study for the decline of mule deer in the West. Every farm boy knows he can't carry more eggs than his basket can hold. The same is true of deer habitat. Mule deer habitat is being paved, altered and fragmented at an alarming rate. And things aren't slowing down any time soon. The list of challenges facing mule deer habitat—urban sprawl, transportation corridors, business, industry, natural resource extraction—goes on and on.

> "THE LIST OF CHALLENGES FACING MULE DEER HABITAT GOES ON AND ON."

PREDATORS

A lot of fingers point at predators when it comes to laying blame for deer declines. The reality is that predators play an important, but not well understood, role in deer population dynamics. Much more research is needed to better understand how predation by animals such as coyote, mountain lion and black bear affect deer numbers. In some areas, predator control measures can offer

a useful tool to increase deer herds. But limits on control methods such as poisons and changing public perceptions about predator control complicate efforts to control predator populations.

COMPETITION WITH OTHER SPECIES

The interrelationship of cattle, sheep, goats, elk and deer has always been fraught with conflict. Cattlemen fight wool growers. Hunters resent livestock. Man's fight for limited resources is as old as time. There can never be a clear winner. Concessions must be made on every side.

And the conflict is not shared only by mankind. Animal species compete for dominance in the fight for survival. Population densities, habitat quality, quantity and diversity set the stage for global conflict, with its attendant successes and setbacks.

HUNTING

Unregulated hunting can cause wide-scale extinctions, evidenced since prehistoric times. As recently as a century ago, many North American species teetered dangerously on the brink before game laws were introduced to regulate harvest. Fish and game agencies are charged with the difficult task of maximizing harvest without endangering populations and species.

WEATHER AND CLIMATE

Mother Nature's whims can make wildlife management agencies look good or incredibly bad. We've seen a lot of the bad in recent years. The timing and intensity of precipitation, heat, wind, snow and temperature have a huge impact on wildlife recruitment and survival. Consider the devastating impacts wrought by the winters of 1983–84 and 1992–93.

The absence, presence and timing of precipitation is a game of life and death. Most species respond to negative climatic conditions by failing to reproduce. In a nutshell, that's the story with Utah's deer herds.

SCOTT ROOT

Officer Shawn Bagley talks to a successful hunter in Spanish Fork Canyon.

CHANGING PLANT COMMUNITIES

Prior to and especially since pioneer settlement, the nature of rangeland has been pretty dynamic. Like a game of pinball, the quality of Utah's shrub and grass communities bounce from one extreme to another. Change is accentuated by variables of precipitation, climate, fire, soil and animal use. No two ranges are alike and no two ranges can be managed identically for optimum production. Range science is an art as well as a science. Different animal species favor different plant communities at different times of year and under different conditions. That's where the art figures in.

DISEASE

As if drought weren't enough, disease has raised its ugly head in recent years. Chronic wasting disease (CWD) could pose the most serious challenge to wildlife management in modern times. There are still a lot of unanswered questions concerning its impact on wild populations and humans as well. Its growing distribution throughout North America has gained the attention of all fish and game agencies.

THE BOTTOM LINE

I hope I have encouraged you to obtain a copy of *Mule Deer Conservation: Issues and Management Strategies,* which is available on the Internet at *www.berrymaninstitute.org/md_book.htm*. It's one of several good mule deer publications you can find on the Internet.

Mule deer

HABITAT CHALLENGES FACING UTAH'S HERDS

BY RORY REYNOLDS
HABITAT INITIATIVE COORDINATOR

UTAH'S MULE DEER *(Odocoileus hemionus)* are part of the deer, or cervid, family, which also includes moose, elk and caribou. Mule deer received their name because of their large ears, which resemble those of mules. The scientific species name hemionus means "half mule."

Mule deer are found throughout the western United States, and the family includes as many as 11 subspecies. The Rocky Mountain mule deer is the largest of the mule deer, and the only subspecies found in Utah.

Rocky Mountain mule deer stand three- to three-and-a-half feet tall at the shoulder. Bucks usually weigh 125 to 250 pounds, with does usually weighing between 100 and 150 pounds. Mule deer in Utah tend to breed (rut) in mid-November. Most fawns are born in mid-June as singles or, more commonly, as twins.

Fawns are born with a light brown coat that's covered with white spots. They grow rapidly and by the time they're approximately three months old, their spots have disappeared. By late fall, fawns are large enough to survive Utah's winters.

The antlers of bucks begin to grow soon after the old antlers are shed in late winter. Bucks generally live apart from does and fawns through the summer antler-growing period. The skin-like "velvet" that covers and provides nourishment to the growing antlers begins to shed in early September, and the antlers harden.

Mule deer are migratory wher-

ever necessary. Deer living in areas of high snowfall, such as the Wasatch and Uinta mountains, or in drastically changing seasonal climates, such as the deserts of southwestern Utah, may move 50 miles or more from summer to winter ranges. Generally, mule deer summer at high elevations and winter at lower elevations. Bucks generally use habitats that are higher in elevation than the areas used by does and fawns.

Eating habits and forage needs

It's an oversimplification to categorize mule deer as browsers. Mule deer eat a wide variety of plants, including browse, forbs and grasses. Feeding habits vary with the changing seasons. Deer capitalize on abundant and nutritious forage for growth and weight gain in summer and fall, and then minimize the amount of energy they use in the winter, when energy costs are high and forage supplies are poor. Deer rely on mostly stored body fat to survive the winter.

Deer are especially reliant on shrubs, such as sagebrush, bitterbrush, mountain mahogany, cliffrose, rabbitbrush, scrub oak and willow during the critical winter months, when snow depths affect deer mobility and the amount of forage available to them.

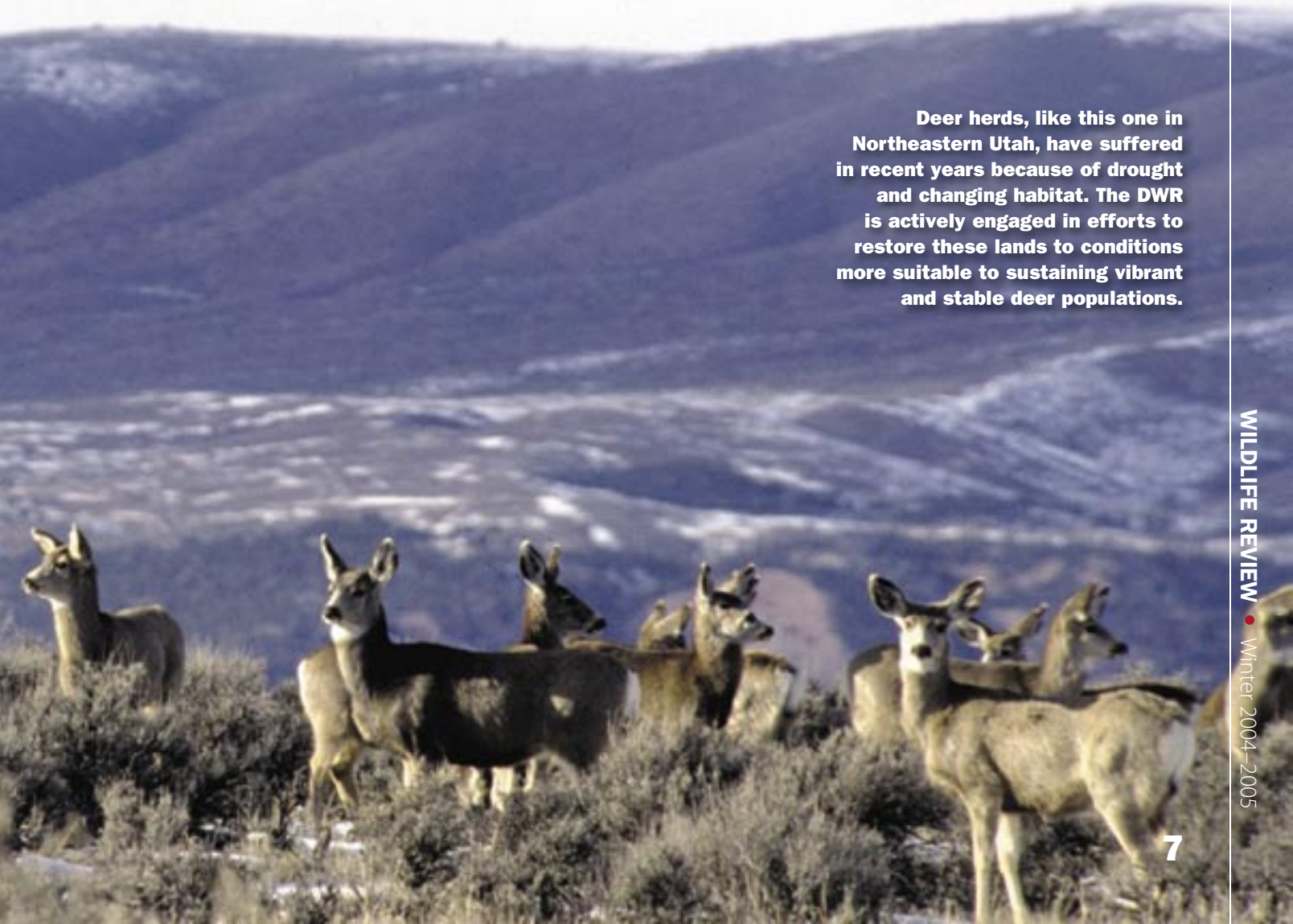
There are two important criteria for evaluating deer forages. First, they should be palatable. Second, they must be digestible by and beneficial to rumen microorganisms.

Deer have a four-chambered stomach—the first of which is the large rumen—and will regurgitate partially digested food and re-chew it when resting. This reprocessing of food, along with beneficial bacteria in the stomach, allows deer to digest fibrous leaves and twigs.

PHOTOS © RON STEWART

Deer digestive tracts differ from cattle and elk in that they have a smaller rumen in relation to their body size. This makes them much more selective in their feeding. Instead of eating large quantities of low quality feed, deer select nutritious plants and parts of plants.

The quality of deer forage is



Deer herds, like this one in Northeastern Utah, have suffered in recent years because of drought and changing habitat. The DWR is actively engaged in efforts to restore these lands to conditions more suitable to sustaining vibrant and stable deer populations.

determined largely by the proportion of plant cell contents (especially proteins and soluble carbohydrates) to cell wall, or fiber. Rumen microbes, yielding the nitrogen and chemical

PHOTOS © RON STEWART

Mule deer thrive in areas providing an abundant variety of vegetation dominated by forbs, grasses and shrubs.

energy needed for their own growth and reproduction, digest plant cell contents rapidly. The by-products of rumen microbes—microbial protein and volatile fatty acids—are the source of nitrogen and chemical energy for deer.

Mule deer do best in habitats that are in the early stages of plant succession, which have been recently disturbed and where forbs, grassy plants and shrubs dominate. There are three general guidelines used to evaluate deer habitat:

1. Early stages of plant succession (plants are young and emerging) are more beneficial than climax or late succession vegetation (trees and shrubs are old and stable).

2. A mixture of plant communities (many species) provides better habitat than any single community (single species).

3. More browse is generally preferable to less browse. This means disturbance of plant communities is a key element to maintaining high quality deer habitat.

Plant challenges facing Utah's deer today

One of the major problems facing mule deer populations in Utah is that many of the state's critical deer ranges are late successional plant communities dominated by old trees and shrubs. Many critical deer winter ranges are dominated by shrubs that are 40 or more years of age, or they're ranges that are being replaced by exotic (introduced) annual grasses. Conifers that provide little forage for mule deer, or suitable habitat for a variety wildlife species, also are replacing many forest aspen habitats.

In order for mule deer herds to recover in Utah, it's essential that extensive habitat restoration and management work be completed to revert critical habitats back to young, vigorous, native shrub and perennial grass dominated communities. Careful management of fire, logging, livestock grazing and clearing pinyon-juniper woodlands can improve habitat for mule deer and many other wildlife species by increasing the abundance and diversity of plant communities. Habitat management and restoration on the scale necessary to influence wildlife populations will require careful planning with special importance being placed on the methods used to manage and restore habitats, the size of the area treated and the effect of numerous projects over time.

With the understanding that habitat loss and degradation are threatening Utah's wildlife today more than any other factor, the Utah Partners for Conservation and Development recently launched Utah's Habitat Initiative to aggressively deal with this statewide problem. This partnership involves state and federal land managers, conservation minded organizations, private landowners, elected officials and private industry working toward a common goal of healthy and sustainable wildlife populations and the many other values that healthy lands provide.

Hunters and anglers, in support of the American system of wildlife conservation, have contributed millions of dollars directly to wildlife management. This has benefited countless wildlife species in Utah, not just those that are hunted or fished. Hunters and anglers also fund an extensive system of officers who enforce laws that protect wildlife and its habitat. Mule deer are a central pillar of this conservation effort in most Western states and are responsible for supporting a wide variety of conservation activities that Utahns value.

What *you* can do

People concerned about mule deer or any other wildlife habitat might consider the following:

- **Purchase a hunting or fishing license. Money from the sale of licenses supports wildlife management in Utah.**
- **Contact land use planners, state and federal land managers, legislators and local government officials to express your concern and support for the management of wildlife habitat.**
- **Volunteer to assist wildlife managers in restoring wildlife habitat.**
- **Become involved with conservation organizations that support wildlife habitat management.**

BY PHIL DOUGLASS
NORTHERN REGION CONSERVATION OUTREACH MANAGER

WILDLIFE MANAGEMENT

Economic realities

The socio-economics of Utah's wildlife

"THE WRITING'S ON THE WALL." People often use this saying to indicate that the future is clear. In the case of wildlife in Utah, however, this saying reflects both the future *and* the past.

Wildlife in ancient times

It's a thought provoking experience to see Utah's petroglyphs—the "writings on the wall" of ancient peoples. In many cases, it's evident that wildlife was an important part of their lives. Bighorn sheep, elk, deer, owls, snakes—all are prominent figures in these ancient records. These etchings also show natives with bows and arrows, which were the "tools" they used to hunt with.

Archeological finds along the Great Salt Lake have also revealed that hunting and hunting camps were common. Bones from waterfowl of the Great Salt Lake were a prominent find in one of these camps, indicating the sustaining influence of wildlife in the lives of these people. Waterfowl hunters today still find arrowheads occasionally.

And waterfowl were not the only wildlife these people utilized. For example, large cutthroat trout and other fishes of Utah Lake sustained the Timponogut Indians of Utah Valley. Research has shown that Native Americans still fished, even when they had enough food for their needs. Surely wildlife added richness and a sense of wonder to their lives.

Wildlife in today's world

Today's "writings on the wall," showing wildlife's influence in our lives, are not quite as simple, nor are they as prominent.

There are many socio-economic factors that are now part of the "picture" of modern life. Yet many people still have a yearning to experience and enjoy wildlife. Naturalist Steve Coleman, a manager for the Utah Tax Commission and a volunteer naturalist at the Farmington Bay Waterfowl Management Area, has set up spotting scopes in downtown Salt Lake City so people can look at nesting Swainson's hawks. He has been overwhelmed by people clambering for a touch of the wild, even in these urban cliffs of cement.

Wildlife values are changing, and they are changing rapidly. Unlike 40 or 50 years ago, hunting and fishing are not the main wildlife-related recreational activities today.

An example of this change in wildlife values is the absence of the great pheasant hunting that once occurred in Syracuse. Hunting is all but gone from this formerly rural community. It's been replaced by housing developments, such as "Pheasant Run," and displays that depict the hunting that once happened in the town. Schools in Syracuse no longer let out early for the deer hunt, as they did up until the 1970s.

A 2001 survey by the U.S. Fish and Wildlife Service clearly showed that nonhunters are the majority of wildlife recreationists in Utah in terms of dollars spent. Wildlife recreationists in Utah spent the following amounts in 2001:

Wildlife viewing: $555.7 million
Fishing: $392.6 million
Hunting: $292.1 million

As hunter numbers shrink, the number of people who enjoy watching wildlife grows. Many of Utah's wildlife management areas support many recreationists other than hunters. For example, 80 percent of the visitors to the Farmington Bay WMA are nonhunters.

Realities of modern-day wildlife management

There are some realities regarding modern wildlife management that anyone with an interest in wildlife should know about.

Perhaps the most important economic reality is that wildlife management through state agencies is mostly dependent on monies from those who hunt and fish. Their license fees, and the taxes they pay on specialized sporting equipment, make up a big part of the revenue for state wildlife agencies, including the Utah Division of Wildlife Resources. Most hunters know this. A growing urban society does not. Many

still think that general taxes pay for wildlife management and wildlife "refuges."

Declines in revenue from hunting and fishing licenses also directly affect the revenue that comes back to the state from the federal government, which gives excise tax dollars back to the states based partly on the number of hunting and fishing licenses each state sells.

Sportsmen have a longstanding tradition of creating and saving places for wildlife. That tradition continues, and in many ways is growing, as sportsmen find creative ways to raise funds for wildlife. But how far can they go as their numbers and influence fade? Once Utah had more than 200,000 deer hunters. That number was cut in half in 1993 when the number of general season deer permits issued each year was capped at 97,000. The reduction in deer hunting permits has been the biggest revenue-limiting factor the DWR has faced in recent years.

> "FEWER HUNTERS ARE PAYING MORE FOR THEIR SPORT."

Clearly, fewer hunters are paying much more for their sport than ever before. Consider the following contributions by sportsmen:

Habitat restoration

In light of dramatic losses of critical winter range, many organizations have stepped up their fundraising efforts to pay to seed and revegetate thousands of acres of sagebrush steppe habitats. Growing numbers of organizations, such as Sportsmen for Habitat, have been instrumental in providing money for habitat restoration projects on big game winter ranges.

Dedicated Hunter program

Each sportsman who signs up in the DWR's Dedicated Hunter program must donate at least 24 hours of service project work during the three years they're in the program. In 2003, volunteers working for the DWR contributed more than 89,000 hours, which equals the work of 43 full-time employees.

Conservation permits

Alan Clark, DWR Wildlife Section Chief, routinely appears before Utah's Regional Advisory Councils and the Utah Wildlife Board to get approval for conservation permits. These highly sought after permits are offered to sportsmen's groups for bidding at their banquets and gatherings. At one RAC meeting, Clark indicated that more than $1 million is raised annually for wildlife conservation through the work of organizations, such as Sportsmen for Fish and Wildlife and the Rocky Mountain Elk Foundation, which auction these permits to their members.

Nonhunters also make contributions, and there are programs they can participate in. Utah Audubon chapters participate in bird surveys that provide useful data. They also raise money for school programs, such as Audubon Adventures. Many people who have thrilled to see mountain bluebirds can thank Utah Audubon for their extensive bluebird nest box trails that have provided nesting for mountain bluebirds.

The DWR's Hardware Ranch Wildlife Management Area collects nearly $80,000 a year from people who ride sleighs to see wintering elk at the ranch. Hunters and nonhunters alike can purchase wildlife license plates to show their support for wildlife. The license plates bring in more than $100,000 a year.

The Nature Conservancy of Utah has made significant contributions for wildlife and wild lands in Utah through generating private donations and acquiring and managing critical areas for wildlife, such as the Great Salt Lake Shorelands Preserve. This organization has also done much to bridge the gap between hunters and nonhunters.

Important questions

There are some important questions that must be answered regarding Utah's wildlife future:

As hunter numbers dwindle, how long will they be able to shoulder the financial burden of wildlife management in Utah?

Hunting and fishing programs are laced with incentives for those who buy licenses and participate in these activities. What sort of "goods and services" do nonhunters expect and what value do they place on their wildlife experiences? How can nonhunters contribute their fair share?

When will nonhunting organizations embrace the Regional Advisory Council process and submit recreation and management proposals to be considered by the Utah Wildlife Board?

When and how will hunters and nonhunters collaborate to ensure the future of Utah's wildlife?

Etchings of the future

There was a long period of time when animals such as bighorn sheep were abundant, both on the landscape and in petroglyphs. Then these animals disappeared in Utah.

If modern-day petroglyphs were rendered in Utah, they would show bighorn sheep again, and hunters would still be prominent in the petroglyph. The modern day version would somehow depict the hunters paying for expensive equipment, such as helicopters, to bring these animals back to areas where they were once abundant.

This part of the picture is clear. The unclear part of the picture would be the people with "tools" in their hands, watching these animals. Will the picture depict them as distant observers, or active participants?

Habitat

2004 Annual Report

Utah Division of Wildlife Resources

Wildlife Habitat Conservation

Annual Report

FY 2004 (July 1, 2003–June 30, 2004)

Utah Habitat Initiative

State and federal agency administrators, who meet regularly as the Utah Partners for Conservation and Development, signed off on a resolution in 2004 to cooperate in a major conservation effort to improve sagebrush steppe and riparian habitats in priority areas statewide. As a result, a conservation partnership is developing among federal and state natural resources agencies, conservation organizations, private landowners and others that is unprecedented in Utah's history.

Success will be measured in watershed-related benefits (improved water quality, water quantity, timing and duration of stream flows), fewer at-risk wildlife populations, economically viable ranching operations, productive big game winter ranges, and other by-products of healthy rangelands and riparian areas. Many of the projects identified in this annual report represent efforts to address the conservation needs in these important areas.

Habitat conservation expenditures

Wildlife Habitat Account

In 1995, the Utah Legislature established a separate account within the Division of Wildlife Resources to fund fish and wildlife habitat conservation and improve public access for hunting and fishing. The legislation also created the Habitat Council to guide the DWR in how these funds should be used. A portion of the revenue received from the sale of every license, permit, stamp and certificate of registration is placed directly into the Wildlife Habitat Account.

Wildlife Habitat Account (Fund 174) expenditures totaled $2,291,447

Cover: Dead and dying sagebrush in Grand County.

Below: The new Great Basin Research Center in Ephraim.

in FY 2004. The percent breakdown by program was as follows: Upland Game (nine percent), Waterfowl (two percent), Big Game (21 percent), Fisheries (63 percent) and Native Species (five percent). The total revenue for FY 2004 ($1,785,560) plus FY 2003 carryover funds ($345,000) yielded a FY 2004 budget of $2,130,560. The difference, $160,887, was drawn from the Fund 174 bank account, leaving a balance of $78,573 in reserve. The FY 2005 budget will be the revenue projected for the year ($1,850,000), since there were no carryover funds from FY 2004.

Blue Ribbon Fishery funds

With assistance from the Blue Ribbon Fishery Advisory Council (BRFAC), the DWR carries out a program to identify, enhance and protect Utah waters and watersheds which provide Blue Ribbon quality angling experiences for the public. Funding comes from a portion of the revenue received from the sale of fishing licenses. In FY 2004, Blue Ribbon funding for habitat conservation-related activities totaled $340,257 (see the "FY 2004 Completed Projects" table).

Conservation permit funds

The DWR has issued conservation permits to generate funds for several wildlife species since 1981. The program began with a "high bid permit" for a desert bighorn ram. Through the years the program has expanded to include all big game species, as well as cougar, bear and wild turkeys.

As per administrative rule R657-41b, conservation organizations are eligible for permits that they in turn auction off at their annual meetings. Beginning in FY 2005, 70 percent of the revenue generated from the auctions will be retained by the conservation organizations to fund special projects approved by the director of the DWR. The remaining 30 percent of the revenue will be donated to the DWR and used to fund similar activities. In FY 2004, conservation permit funding for habitat conservation-related activities totaled $714,485 (see the "FY 2004 Completed Projects" table).

Big Game Enhancement Fund

Hunters can donate to the Big Game Enhancement Fund anytime they apply for a buck deer, bull elk or limited entry big game permit. Donations are used to pay for a variety of big game management activities, including habitat conservation projects. In FY 2004, big game enhancement funding for habitat conservation-related activities totaled $89,518 (see the "FY 2004 Completed Projects" table).

FISCAL YEAR 2004

HABITAT CONSERVATION HIGHLIGHTS

Stream conservation projects

Weber River — Morgan and Summit Counties

Two projects were completed on private property in the Henefer area. The Paskett and Richins properties involved 3/4 miles of river restoration and angler access. DWR biologists, working along with the division's heavy equipment crew, installed J-hook rock barbs, rootwads and cross-vanes to encourage bank stabilization and create pools for fish. The rock barbs and rootwads were strategically placed to direct high flows away from the bank, form scour holes and create excellent habitat for brown, cutthroat, and rainbow trout, mountain whitefish and other fish species. The DWR also hauled rock and rootwads to structure locations for the Weber River Ranch project, which is scheduled for completion in FY 2005.

The old Ferron Reservoir dam in Sanpete County was repaired.

Colorado River cutthroat trout habitat restoration — Uinta Basin

The DWR teamed with the U. S. Forest Service and the National Fish and Wildlife Foundation to restore and protect streams vital to the conservation of Colorado River cutthroat trout populations on the Ashley National Forest. Project areas included portions of Mann Creek, South Fork Brownie Creek, West Fork Little Brush Creek and Timber Canyon. Activities included riparian fencing, stream bank stabilization, fish migration barriers, riparian vegetation plantings, road closures, non-native fish removal and re-stocking Colorado River cutthroat trout.

San Pitch River — Sanpete County

A 1/2-mile section of the San Pitch River, which runs through property owned by the Mower Family, was restored to improve stream and riparian habitats for fish and wildlife. Steep eroding banks were sloped and seeded and planted with riparian vegetation. Rock barbs and rootwads were anchored into the banks and positioned to deflect flows away from the banks and create pools for fish. The riparian corridor was fenced to restrict livestock and vehicle access to specially designed crossing structures. Angler access was negotiated as part of the project. Funding partners included the Mower Family, the U.S. Fish and Wildlife Service (Partners For Fish and Wildlife Program) and the Environmental Protection Agency (Sec. 319 funds). Support from the Sanpete Soil Conservation District and the San Pitch Watershed Group was instrumental in obtaining federal funds.

East Fork Sevier River — Garfield County

Work was completed on the first phase of a stream and riparian habitat restoration project on Bureau of Land Management land south of Antimony. The DWR's heavy equipment crew worked with division biologists to shape banks, create floodplains, install structures and relocate the stream channel in several locations along a 1/2-mile reach. This is a cooperative project involving the BLM's Richfield Field Office.

Dam maintenance

Ferron Reservoir — Sanpete County

Ferron Reservoir is near the headwaters of Indian Creek, within the Manti-LaSal National Forest. The dam was constructed in the early 1900s. The reservoir was used for irrigation storage until the 1970s, when the DWR acquired it for a recreational fishery. The repair project involved lowering the embankment and spillway so the new lake elevation is below a seepage zone.

Community fishing ponds

Spanish Fork Pond Project — Utah County

The DWR worked with Spanish Fork City to incorporate a four-acre community fishing pond and related facilities into their plans for an irrigation reservoir near the mouth of Spanish Fork Canyon. Funds were used to purchase and install a fish cleaning station, fishing pier, angler access trail, restrooms, signage, picnic areas, landscaping, an inlet and outlet structure and a parking lot. The city funded the major construction elements: pond excavation, concrete lining and the associated irrigation system. The city will be responsible for ongoing operation and maintenance of the pond and facilities, and the DWR will manage the fishery.

Range restoration projects

The DWR participates with private landowners, public land management agencies (the BLM and U.S. Forest Service), and other state agencies and conservation organizations to protect and restore important wildlife habitats statewide. In many cases, this involves

seeding to reestablish a diverse mix of grasses, forbs and shrubs. In April 2004, the DWR completed construction of the new Great Basin Research Center (GBRC) in Ephraim. The 17,200 square-foot facility includes a 600,000-pound capacity seed warehouse, research greenhouse, seed laboratory, refrigerated seed storage unit for heat-sensitive species, and office space for DWR research biologists. Funding partners included the U.S. Forest Service, Ephraim City and the Rocky Mountain Elk Foundation.

The following table summarizes DWR's seed contributions to range restoration projects on public and private lands in FY 2004. DWR biologists and GBRC personnel coordinated the DWR's involvement, including seed contributions.

FY 2004 seed report summary

Landownership	Number of projects	Acres	Pounds of seeds	Seed value
Private Land	29	9,347	91,031	$167,218.00
SITLA	1	4,600	41,353	$102,670.00
Forest Service and BLM	5	2,727	28,570	$ 42,043.00
DWR	17	837	12,410	$ 35,497.00
Other	4	85	2,867	$ 10,503.00
Totals	**56**	**17,596**	**176,231**	**$357,931.00**

Habitat restoration highlights

Project	Ownership	County	Acres	Pounds
Duck Creek	Private	Rich	2,975	29,976
Cascade Fire	Private	Wasatch	2,112	6,998
Bulldog Fire (Henry Mtns)	SITLA	Garfield	4,600	41,353
Mustang Fire II (Dutch John)	Forest Service	Daggett	1,900	20,017
Rattlesnake Fire	Private	Box Elder	900	16,231
Rabbit Creek Fire	Private	Rich	500	4,324
Salt Creek Mesa Burn	BLM	San Juan	450	4,898

Water Developments

Southern Region West Desert guzzlers — Millard, Beaver, Iron and Washington Counties

DWR personnel installed 10 big game guzzlers in the West Desert portion of the region. Depending on their location, the guzzlers will provide a critical water source for elk, deer, pronghorn, chukar, blue grouse, quail, mourning doves and a variety of other wildlife species. The guzzler design included steel framing to withstand wildfires, four buried 1,700-gallon tanks and a 24-foot by 36-foot collection apron made of galvanized steel. Funding partners included the Rocky Mountain Elk Foundation, the One-Shot Antelope Hunt Foundation (Water For Wildlife Program), and the BLM.

Monticello Face wildlife guzzlers — San Juan County

Four 1,000-gallon guzzlers were installed in aspen and ponderosa pine habitats on the east slope of the Abajo Mountains with the help of National Wild Turkey Federation (NWTF) volunteers and personnel from the Manti-LaSal National Forest, San Juan County and Monticello City. The areas provide habitat for Merriam's wild turkey, mule deer, elk, and other wildlife species. The guzzlers will be needed to supplement existing spring sources that have been tapped as part of a culinary water system improvement project. The NWTF volunteers will inspect and maintain the guzzlers annually.

Far left: The recently completed 17,000-square-foot Great Basin Research Center seed warehouse will allow the DWR to store and mix 600,000 pounds of seed annually.

Left: The DWR installed J-hook rock barbs, rootwads and cross-vanes to encourage bank stabilization and create pools for fish in sections of the Weber River.

2004 completed projects

Wildlife Habitat Account

Statewide

	Expenditures	Description
Habitat administration	$108,833	Program administration
Habitat annual report	4,240	Publication
Predator control	71,099	Upland game management
Stream restoration training	34,199	Wildlife hydrology courses
Great Basin Research Center	162,791	Building construction
Waterfowl discretionary projects	6,240	WMA maintenance projects

Northern Region

	Expenditures	Description
WMA maintenance projects	$43,802	Fences, signs, roads, weed cont.
Ogden Bay WMA		
Upland development	3,838	WMA maintenance activities
Wetland habitat technician	3,838	WMA maintenance activities
Farmington Bay WMA		
Habitat technician	8,571	WMA maintenance activities
Carp control	3,407	Rotenone treatment
Public, Salt Creek, Locomotive Springs WMAs		
Habitat technician	14,035	WMA maintenance activities
Water control structures	18,017	Water level management
Carp control	3,417	Rotenone treatment
Weber River restoration		
Paskett property	7,645	Stream restoration
Richins property	67,907	Stream restoration
Big Spring Creek	4,529	Stream restoration (engineering)
Uintah "U" property develop.	2,910	Trail const., habitat improv.
Davis High School bat colony	1,162	Bat "house" construction
Weber River corridor acquisition	50,000	Ogden City/DWR acquisition

Northeastern Region

	Expenditures	Description
WMA maintenance projects	$155,214	Fences, signs, roads, weeds
Browns Park WMA maintenance	48,168	WMA maintenance activities
Book Cliffs Roadless Area	8,565	Riparian tree, shrub planting
South Fork Brownie Creek	9,770	Stream restoration
Mann Creek	13,287	Stream restoration
West Fork Little Brush Creek	20,000	Stream restoration
Timber Canyon	26,778	Fish barrier
Gayle Rasmussen guzzler	2,567	Water development

Central Region

	Expenditures	Description
WMA maintenance projects	$70,502	Fences, signs, roads, weed cont.
Fifth Water riparian improvement	5,625	Riparian fencing
Sanpitch River – Mower property	14,770	Stream restoration
Spanish Fork Pond	289,784	Community fishing pond
Strawberry River restoration	623	Information signs
Yuba Reservoir	22,880	Yellow perch artificial structures

Southern Region

	Expenditures	Description
WMA maintenance projects	$106,320	Fences, signs, roads, weed control
Banks property acquisition	167,264	Stream corridor acquisition
East Fork Sevier River	49,141	Stream restoration
Clear Lake, Topaz, Bicknell, Redmond and Pahvant WMAs		
Habitat technician	11,728	WMA maintenance activities
WMA maintenance projects	28,449	WMA maintenance activities
Hurricane Pond fishing pier	27,347	Angler access
Bicknell Bottoms fence	5,880	Boundary fence construction
Indian Peaks WMA maintenance	15,003	Fence construction/maint.
Gates Lake	64,841	Dam maintenance
Parowan Pond	11,806	Community fishery

Southeastern Region

	Expenditures	Description
WMA maintenance projects	$ 83,028	Fences, signs, roads, weed cont.
Guzzler maintenance	2,640	Water development for wildlife
Ferron Reservoir	265,331	Dam maintenance
Desert Lake WMA		
Seasonal personnel	3,193	WMA maintenance activities
Purple loosestrife control	4,065	Weed control
Monticello Face wildlife guzzlers	3,400	Water development
Gigliotti Pond repairs (liner)	112,396	Community fishery/Helper City
Subtotal for all projects	**$2,270,845**	

Blue Ribbon Fishery Account

	Expenditures	Description
Administration	$ 17,387	Program administration
Weber River Ranch phase I	41,650	Stream restoration
Stream surveys	24,402	Habitat monitoring
Walker property	3,650	Appraisal
Yuba Res. fish management	20,000	Yellow perch stocking
Strawberry Res. equipment	15,708	Habitat monitoring equipment
Strawberry Res. brochure	1,085	Conservation outreach
East Fork Sevier River	21,997	Stream restoration
Banks property acquisition	176,694	Stream corridor acquisition
Scofield Res. parking area	1,900	Property appraisal
Misc. realty services	1,000	Property appraisal
Wildlife Review mag inserts	12,000	Conservation outreach
Signs	2,784	Help Stop Poaching Program
Subtotal	**$340,257**	

Conservation Permit Fund

	Expenditures	Description
Brooke Ranch cons. easement	$ 75,000	Habitat protection
Mustang Fire seeding II	26,481	Seed
Anthro Mountain guzzlers	702	Water developments
Willow Creek irrig. diversion	15,558	WMA maintenance
Pronghorn guzzler repairs	1,685	Water developments
Timpanogos Foothills Rd closures	8,693	Habitat protection & restoration
Loafer Mountain access	9,068	Sportsman access
Cascade Fire seeding	16,000	Seed
Southern Reg. W. Desert guzzlers	40,955	Water developments
Stanworth property	2,600	Property appraisal
Otter Creek Narrows	3,000	Property appraisal
Panguitch Lake guzzlers	4,917	Water developments
Bulldog Fire seeding (Henry Mtns)	69,084	Chaining and aerial seeding
Habitat improvement equip.	100,742	Pasture aerator, drill, harrow
Great Basin Research Center	340,000	Building construction
Subtotal	**$714,485**	

Big Game Enhancement Fund

	Expenditures	Description
Guzzler Research	$14,431	DWR/BYU research project
East Manti vegetation mapping	19,238	Habitat inventory
Cheatgrass study phase II	2,917	Habitat research
Exclosure study	12,741	Habitat research
Book Cliffs aspen regen. study	898	Habitat research
Pinyon-juniper mgmt. guidelines	15,000	Bird habitat management pub.
Datacorders	24,293	Habitat monitoring equipment
Subtotal	**$89,518**	

Total of all expenditures

Total	**$3,415,105**

Right: Seed mixing equipment at Great Basin Research Center. The new facilities will increase the DWR's ability to carry out habitat restoration projects statewide.

HABITAT COUNCIL MEMBERS
Rick Danvir, Big Game
Ernie Perkins, Upland Game
Jim Carter, Aquatics
Debbie Goodman, Non-consumptive/Native Species
Bill James, Chair, DWR Habitat Section Chief
Randy Radant, DWR Aquatics Section Chief
Alan Clark, DWR Wildlife Section Chief
Paul Birdsey, DWR Federal Aid Coordinator

BLUE RIBBON FISHERIES ADVISORY COUNCIL
Paul Dremann, Chairman (Trout Unlimited)
Jim Carter (Strawberry Anglers Association, Friends of Strawberry)
George Sommer (BASS)
Tom Ogden (Sportsman)
Wes Johnson (Trout Unlimited)
Randy Radant (Division of Wildlife Resources)
Byron Gunderson (Fish Tech)
Steve Schmidt (Western Rivers Flyfisher)
Rick Rosenberg (Southern Utah Anglers)
Jeff Taniguchi (Uinta Basin Bass Club)
Bryce Bishop (sportsman)
Collin Allan (sportsman)
Lori Batty (Big Foot Fly Shop)

CONSERVATION PERMIT FUNDRAISERS
Sportsmen for Habitat (www.sfwsfh.org)
Foundation for North American Wild Sheep (www.fnaws.org)
Rocky Mountain Elk Foundation (www.rmef.org)
Mule Deer Foundation (www.mdf.org)
California Deer Association (www.caldeer.com)
National Wild Turkey Federation (www.nwtf.org)

DEPARTMENT OF NATURAL RESOURCES
Robert Morgan, Executive Director

DIVISION OF WILDLIFE RESOURCES
Miles Moretti, Acting Director
John Fairchild, Habitat Conservation Coordinator
Nancy Fennern, Program Accountant
Karen Jones, Office Manager

This annual report is dedicated to the memory of Kevin K. Conway, recent DWR director, whose vision and leadership played a major role in the development of the Habitat Initiative.

STATE OF UTAH
NATURAL RESOURCES
Division of Wildlife Resources

Heavy equipment was used to shape banks and relocate the stream channel in the East Fork Sevier River.

BY JOHN PRATT
SERGEANT, NORTHERN REGION

OFF-HIGHWAY VEHICLES

Agencies join together

Protecting Utah's fragile environment

IT BEGAN more than 20 years ago, a sound like distant thunder. It is now a dull roar heard over many of the wild lands in Utah.

It's the sound of the 160,000 off-highway vehicles (OHVs) that are currently registered in the state.

While responsible OHV use provides recreational opportunities to people and economic support for various communities, irresponsible OHV use can be destructive to wildlife habitats and populations. A typical six-foot-wide OHV trail one mile long denudes almost three-quarters of an acre of habitat, equal to the trail's surface area. If you were to assume that wildlife within 50 yards (a conservative estimate) of that mile-long trail would face disturbance from the engine noise and movements of OHVs passing nearby, then that would mean wildlife were negatively affected on more than 36 acres along the trail. With 160,000 OHVs registered in Utah today, a great many more miles of trail run through Utah's wildlife habitat.

Like any other resource use, some use can be tolerated. When the use exceeds Mother Nature's ability to repair itself, however, permanent landscape damage can result. All you have to do is look back in history and observe scars from past use to realize how fragile our environment is and how long environmental damage lasts. For example, although not called off-highway vehicles, wagon trains left tracks that can still be seen today.

While most OHV riders obey laws, a small percentage of riders believe "if the machine will take me there, I can go there." It's those riders who damage critical habitats important to Utah's wildlife.

Agencies join together

A statewide OHV coordinating team from federal, state and local land management agencies has identified areas where OHV use has been a problem and where it continues to be a management concern. Some of the factors the team considered, when designating areas as hotspots, included areas where OHV use is concentrated, or where OHV use conflicts with wildlife species, critical habitats, sensitive watersheds or archeological sites. More than 100 areas statewide were identified as hotspots. Twenty of these areas have been targeted for intense, coordinated law enforcement efforts.

Various government agencies work together to enforce OHV regulations.

Irresponsible off-highway vechicle riders inflicted damage to this hillside that will take many years to heal.

Utah's OHV law allows riding only on public lands that are designated as open to riding. U.S. Forest Service, Bureau of Land Management and Division of Wildlife Resources lands include travel designations in their management plans. Maps showing where OHV riding is allowed are available from Forest Service district offices, BLM field stations, Division of Parks and Recreation offices, and some individual state park headquarters and DWR offices.

DWR officers, who are most commonly known for enforcing wildlife laws, are also on OHV patrol, handling OHV abuse on many of Utah's diverse habitats. For example, cooperative patrols have been instituted in Box Elder County where sheriff's deputies, wildlife officers, parks and recreation officers, and federal officers from the BLM and the Forest Service, work in pairs. They patrol during special high use times and in hotspots where habitat problems have been identified by land managing agencies. These patrols provide quick response to emergencies and, by pairing federal and state officers together, both federal land use violations and state OHV laws can be enforced at the same time.

> "A TYPICAL SIX-FOOT-WIDE OHV TRAIL ONE MILE LONG DENUDES ALMOST THREE-QUARTERS OF AN ACRE OF HABITAT…"

These patrols have been very effective in reducing effects to habitat. Doc's Flat and Willard Peak in Box Elder County are areas where habitat damage has affected wildlife populations, as well as the quality of community watersheds. On-the-ground habitat rehabilitation efforts by management agencies, combined with the enforcement of OHV closures, are providing amazing results in repairing watershed damage.

Statewide, wildlife officers issued 307 citations in 2003 for OHV violations. Some of the most common violations included OHVs that were not properly registered, helmet violations, juveniles riding without an education certificate and operators riding OHVs in areas not open to their use.

OHV use on DWR properties

DWR properties across the state were purchased with specific wildlife

habitat objectives. When OHV use is compatible with those objectives, use has been allowed. When use is not compatible (for example, during critical winter periods or to limit access during hunting seasons to provide protective cover and refuge for the animals), use of OHVs has been restricted.

For example, officers in the DWR's Northern Region implemented an action plan targeting specific DWR properties that have experienced habitat damage and OHV problems. The DWR's Brigham Face Wildlife Management Area and the Henefer-Echo Wildlife Management Area are DWR-owned properties with significant OHV concerns. Both properties were purchased with sportsmen's dollars for protection of critical big game winter range and both have restrictions on OHV use to protect those habitats.

The right way to ride your OHV

Here are some things every OHV rider can do to operate their OHV responsibly and protect Utah's wildlife and the environment:

- The retrieval of downed game is not a valid reason to travel off-road. A single new track often leads to a new trail and eventually a new road. An innocent retrieval of downed game one year can lead to the pioneering of new roads and access, squeezing wildlife into smaller and smaller refuges. Never take your OHV off-road to retrieve downed game.
- In spring, OHV riding in conjunction with the collection of shed antlers is particularly destructive on wet winter ranges. This is also a time when big game animals are in a weakened condition and susceptible to harassment. Never take your OHV onto big game winter range, in search of shed antlers or for any other reason.
- Make sure your OHV is registered and never allow juveniles to operate an OHV without a helmet and a safety certificate from the Division of Parks and Recreation. OHV registration violations are the fifth most common citation written annually by wildlife officers.
- Never ride on private property without permission, never ride your OHV on public lands unless you're sure it's designated open to riding (obtain riding maps to learn which areas are open) and don't violate firearm laws while riding your OHV.

You can help

The DWR recognizes and has committed enforcement efforts to help solve OHV abuse issues not only during hunting seasons, but whenever and wherever OHV use occurs on public land. Recently, the Utah Wildlife Board approved restrictions on OHV use at state waterfowl management areas, where OHVs sometimes travel on sensitive marsh habitats and adjacent areas. This abuse can happen even outside the hunting season.

Utah's OHV riding public must become aware of restrictions and get involved in the protection of Utah's wildlife habitat. OHV abuse or irresponsible use should be reported to local authorities or the DWR's Help Stop Poaching Hotline at 1-800-662-3337.

PHOTO BY JOHN PRATT

Law enforcement officers talk to an off-road motorcyclist in northern Utah's Wasatch Mountains.

Utah's prolonged drought is causing hardship for wildlife. Many species, such as pronghorn antelope, have seen many of their usual sources of water dry up. The DWR's guzzler program augments this scarce water by placing artifical watering holes in critical areas around the state.

BY LYNN CHAMBERLAIN
SOUTHERN REGION OUTREACH MANAGER

GUZZLERS

Providing a needed drink

Mitigating the effects of drought

IT'S NO SECRET that for the past six years, Utah has experienced a drought unlike any other in the state's recorded history. Fortunately, most Utahns are accustomed to desert conditions and understand that water is a limited resource to be treasured and conserved. Wise-water conservationists have constructed reservoirs in Utah to store and distribute this valuable commodity. Without their eyes on the future, we would be in even more serious trouble than we are now.

Lack of water affects wildlife too

Wildlife also suffers during times of drought. Many species only go to water once a day. Imagine what it would be like to watch your water source dry up over the course of a few days. Just as wise conservationists have increased the availability of water for human consumption, wildlife managers have done the same for wildlife by constructing devices known as guzzlers. Although they're not as obvious as reservoirs, guzzlers are vital to wildlife across Utah.

What's a guzzler?

A typical guzzler includes an apron, which is usually made of metal or concrete. The apron gathers rainwater and funnels it to an underground storage tank. From the tank, the water is piped to a drinker that provides animals and birds access to a cool drink.

Many guzzlers are built in washes or gullies and utilize the natural terrain to capture rainwater. They may be all but invisible to the human eye, but they are well known and utilized by local wildlife.

Volunteers help in guzzler effort

Over the years, the Division of Wildlife Resources has built hundreds of guzzlers throughout Utah. Most were paid for with state habitat funds and monies provided by conservation groups, including the One Shot Antelope Foundation (out of Lander, Wyo.), Sportsmen for Fish and Wildlife, the Rocky Mountain Elk Foundation, the Mule Deer Foundation and others. County governments have also provided funding and assistance. Without these organizations' contributions, construction of many of these guzzlers would have been impossible.

PHOTO BY LYNN CHAMBERLAIN

Once finished, this guzzler will help sustain hundreds of thirsty animals.

PHOTO BY © RON STEWART

Because these watering holes are dependent on rainwater, even they can go dry during prolonged periods without rain. Over the past few years, members of the Dedicated Hunter program have hauled water to many of them. They receive credit for volunteer hours and the satisfaction of knowing they've performed a lifesaving service for wildlife in the area.

All types of wildlife benefit

During the hot summer months, guzzlers are a great place to watch wildlife. Many species congregate near them, and all types and sizes of wildlife benefit. Deer, bighorn sheep, quail, ground squirrels and many other species all enjoy the cool water they find at guzzlers.

PHOTO BY LYNN CHAMBERLAIN

Dedicated Hunters have worked with the DWR to help fill empty guzzlers.

Dedicated Hunter news

An important date

Jan. 31 is the new application deadline to enroll or re-enroll in the Dedicated Hunter program.

Due to a recent rule change, participants who do not return their unused Dedicated Hunter Permit by Jan. 31 will be credited with a program harvest—even if they did not harvest a deer (the deadline was changed from Jan. 15.) This counts toward the two deer participants may harvest during the three-year enrollment period.

The division now accepts permits returned after the deadline. Upon receivng the permit, the division will remove the program harvest credited the the participant's account caused by missing the deadline. However, participants returning permits after the deadline, who are then credited with a second program harvest, are only eligible to obtain their Dedicated Hunter Permit from the remaining big game drawing permits. These participants must obtain their Dedicated Hunter Permit over-the-counter at a division office. If no permits remain after the big game drawing, the division will issue no additional Dedicated Hunter Permits.

Returning unused permits and attached tags by the Jan. 31 deadline also automatically enters participants into the Dedicated Hunter Limited Entry Dedicated Hunter drawing, where approximately 24 to 30 deer and elk permits are available to Dedicated Hunters each year. The division posts results for this draw on its Web site on April 29.

Participants wishing to make changes to regional hunt choice must do so in writing by Jan. 31.

Mail the item listed above to:

Utah Division of Wildlife Resources
Attn. Dedicated Hunter Program
P.O. Box 146301
Salt Lake City, UT 84114-6301.

The division cannot guarantee delivery. Consider sending items via certified mail. Check with your local Postmaster for delivery options.

Time up? You're in luck

The application period to enroll or re-enroll in the Dedicated Hunter program starts Jan. 1, 2005 and ends Jan. 31, 2005. This is a change from previous years.

Get those hours done

To receive a permit drawn in the Dedicated Hunter Limited Entry drawing, participants must complete their program requirements by June 1. If participants fail to meet these requirements by this date, the division may issue the permit to the next eligible Dedicated Hunter.

Be aware of changes

Participants entering or re-entering the program are subject to any changes subsequently made in the rule, so remember to read the rule every year.

For more information

Utah's Dedicated Hunter Program is unique because it's the only program like it in the nation. You can find additional information about the program and the actual Dedicated Hunter Rule [R657-38] online at wildlife.utah.gov/dh.

BY DIANA VOS
PROJECT WILD COORDINATOR

LIVING THE

High life

Wildlife of Utah's mountain forests

ACROSS UTAH, 41 distinct mountain ranges rise skyward. Even though Utah is the second driest state in the nation, these mountains capture enough precious rain and snow from the clouds rising up their flanks to allow forests of pines, oaks, aspens, spruces, firs and many other trees to grow. These forests provide a wealth of habitat for many species of wildlife.

The mountains in Utah rise dramatically from its desert landscape. This sharp increase in elevation results in a variety of life zones within a relatively small area. A life zone is a vegetation community dominated by one or two species of plants. At increasing elevations from the base of a mountain to its summit, four major life zones can be encountered: the transition or foothills zone; the Canadian or montane zone; the Hudsonian or subalpine zone; and the alpine zone.

The plant communities making up these life zones vary according to elevation, latitude and soil type. The zones are not usually distinct, and in most places they show a gradual transition as one community ends and an adjacent one begins. These zones of transition are called edges, or ecotones. Ecotones offer a mixture of the two adjacent plant communities and thus offer more diversity than either community on its own. This greater diversity in vegetation, in turn, supports a greater diversity of wildlife.

Since animals do not occur randomly in nature, each of Utah's life zones provide habitat to certain wildlife species. Some species are tied very closely to a particular life zone plant community and others are more generalists, capable of living in a wider range of life zones. Several of Utah's mountain species, and the physical and behavioral adaptations they have that allow them to live where they do, are described below.

Life zones of Utah's mountains

Alpine *(above 11,200 to 12,000 feet, depending on latitude)*

Wind and cold shape the alpine life zone to look like the arctic tundra. One hundred mile per hour winds, average annual temperatures below freezing and limited effective precipitation create a treeless, barren looking landscape. But if you look closely, you'll discover an abundance of life. Twisted bristlecone pine growing on rocky outcrops border the alpine zone. Beyond the trees, dwarf wil-

PHOTO BY JOHN PRATT

Utah's green mountains are a stark contrast to the state's desert areas.

PHOTO BY © KIRK GARDNER

Aspen forests like this dominate much of Utah's high country.

lows and myriad miniature cushion-like plants carpet the ground. Most are slow-growing perennials, short, with small parts except the flower, and their leaves are often covered by a protective cuticle or dense hairs to reduce water loss. In Utah, you can find the alpine life zone in the Uinta Mountains.

Hudsonian or subalpine
(9,500 feet to the tree line)

The tangled spruce-fir forest is the dominant plant community in this life zone. The climate is cold, windy and moist, with most of the precipitation falling in the form of snow. Snow pack remains well into summer and the frost-free season lasts only two months. The dense stands of conifers modify the harsh climate by reducing wind speed and radiation intensity and by preventing moisture loss. Englemann spruce-subalpine fir forest is the climax community because no other trees can grow in their shade at this elevation. The area around the town of Alta is a good example of the Hudsonian life zone.

Canadian or montane
(8,000 to 9,500 feet)

At this elevation in Utah, you might find a forest dominated by lodgepole pine, ponderosa pine, aspen or Douglas fir. The dominant plant community is dictated by slope orientation, soil type and soil moisture. All the forests at this elevation harbor critical habitats for many species of wildlife. Ponderosa pine forests can be found on Elk Ridge in the Abajo Mountains. Douglas fir forests are common in the Tushar Mountains. Lodgepole pine forests spread across the north slopes of the Uintas.

Transition or foothills
(5,500 to 8,000 feet)

The most common plant communities at this elevation in Utah are pinyon-juniper woodlands and oak-maple shrublands. Pinyon-juniper woodlands cover nine million acres in Utah. This "pygmy" forest occupies warm, dry sites with mean annual temperatures between 45 degrees and 55 degrees Fahrenheit. The frost-free season is usually more than 80 days. Thick stands of oak-maple shrublands ring many of Utah's mountains. This plant community is often intermixed with mountain mahogany and provides important habitat to a diverse animal community.

Some of the wildlife that live in Utah's mountain forests include the following:

Northern goshawk *(Accipiter gentiles):*

The Northern goshawk makes its home in the dense subalpine spruce-fir forests of Utah's mountains. One of the fiercest and most aggressive raptors, the goshawk has a reputation for being an especially adept killer, hunting grouse, squirrels, snowshoe hares, songbirds and smaller hawks. Having short rounded wings and a long tail, which allow it to maneuver with extreme skill and agility, the goshawk is very well adapted to hunting in the wooded areas where it lives. The goshawk

is the largest of three North American raptors known as accipiters. Accipiter, its genus name, is derived from the Greek words aci, which means "swift" and petrum, which means "wing." Northern goshawks build their nests with twigs, grasses and other plant material. Females may lay one to three eggs each breeding season. It takes about 30 to 35 days for the eggs to hatch. Young hawks grow quickly and leave the nest in 30 to 60 days. The goshawk is fearless in defense of its nest and will boldly attack anyone who ventures too close. Although goshawk populations in the West are considered stable, concerns exist about the impacts that logging old-growth forests might have on the species.

Pika *(Ochotona princeps):*

Pikas, known also as "rock rabbits," live among the rocky alpine talus slopes found at elevations above timberline. Their small, rounded, nearly tailless bodies and their gray-colored fur, which matches perfectly with the rocks they live among, make them difficult to spot. It's their sharp, whistle-like "jeep" warning call—piercing the alpine air—that usually gives them away. Pikas utter these calls to announce the presence of danger to other members of the colony. Pikas do not hibernate during the winter but instead live off of dried piles of grasses and forbs they collect and store during the short high country summer. Clipped vegetation from a nearby meadow is stacked onto a "hay pile" in an area of the pika's territory that is partially exposed to sunlight so the hay can cure. To avoid raids on their hay piles by other pikas, they mark the boundaries of their territories with scent from glands on their cheeks.

Smooth green snake *(Liochlorophis vernales):*

As its name suggests, this species of snake is primarily green in color. It's actually the same color as fresh green grass, which is appropriate since this snake resides in moist, grassy areas of meadows, marshes and fields along forest edges. Measuring 15 to 30 inches, this snake is so swift and well adapted to hiding in its environment that few people ever get a chance to see one. Usually they hide under rocks or other naturally occurring litter. Sometimes they can be seen sunning themselves on low branches of trees or on shrubs where they forage for insects and spiders, which make up the bulk of their diet. In Utah, they occur in the Wasatch, Uinta, Abajo and La Sal mountains, and the East Tavaputs Plateau, at elevations up to 9,500 feet. They are not common and have been listed on the Utah Sensitive Species List. Since they are cold-blooded and would not survive the cold conditions of winter, smooth green snakes hibernate in the winter, often together, in small mammal burrows or other underground shelters below the frost line.

Red crossbill *(Loxia curvirostra):*

The Red crossbill is readily identified by its distinctive bill that, as the bird's name implies, crosses at the tip. It lives in coniferous forests, where trees that bare the seed cones upon which they almost exclusively feed are abundant. The species is moderately common in appropriate habitat in Utah. Holding a cone with one foot, the bird first inserts its closed bill between the cone and the scales. It then pries the scales apart by opening its bill, and uses its flexible tongue to extract the seed. Being highly dependent on pine seeds, the red crossbill is an erratic and nomadic species. In its search for an abundant crop of conifer seeds, it may travel as far south as Mexico, but does not truly migrate. Red crossbills will breed at almost any time of the year when food is plentiful. The nest, built by the female, is usually found on the horizontal branch of a conifer, away from the trunk. Chicks are fed regurgitated seed pulp. The tips of their bills are not crossed when they hatch but cross gradually, shortly after they fledge.

Snowshoe Hare *(Lepus americanus):*

The snowshoe hare is a resident of Utah's Douglas fir, lodgepole pine and aspen forests of the subalpine zone. In summer they are brown and in winter they are white—the perfect way to stay out of sight. Because it changes color to match with the winter's snow, the snowshoe hare is also sometimes called the varying hare. Their other name comes from the especially large, thickly furred hind feet they have. These large furry feet, up to six inches long, act like snowshoes to support them as they dash across deep snow, and give them traction on icy crusts. This comes in handy when a snowshoe hare is being chased by a bobcat or one of its many other predators looking for a meal. Summer food for the snowshoe hare itself consists of a variety of tender green plants. In winter it feeds upon bark, twigs of alder, aspen, willow and other deciduous trees and shrubs, and the shoots of evergreens.

Boreal Toad *(Bufo boreas boreas):*

The boreal toad is a mountain toad that lives within subalpine and alpine meadows at elevations between 6,000 to 11,000 feet. A subspecies of the western toad, they breed in a variety of shallow wetlands such as small pools, bogs, beaver ponds, marshy edges of mountain lakes and backwaters of creeks and rivers. Being cold-blooded, to survive the freezing temperatures of winter, boreal toads must hibernate within an underground burrow below the frost line. Ice and snow lock the toads in their hibernation burrows for eight to nine months at a time. Some cold climate amphibians have an antifreeze-substance in their blood that makes hibernation in cold climates possible. It is unknown if boreal toads contain this substance. When they emerge from their burrows boreal toads feed on a wide range of insects and other invertebrates. Boreal toads were plentiful along montane lakes in the Wasatch and Uinta mountains as late as the 1970s. Today only a few populations still remain and the species is included on Utah's Sensitive Species list. Research has not been able to provide conclusive answers explaining boreal toad declines, but a combination of factors, including loss and degradation of habitat, environmental contaminants, disease and ozone layer depletion and associated increased UV radiation may all be involved.

Northern flying squirrel
(Glaucomys sabrinus):

Flying squirrels, despite their name, don't actually fly. A loose fold of skin known as the patagium stretches between their front and hind legs allowing them to glide or "volplane" for distances of 100 feet or more. Climbing high in a tree, a flying squirrel leaps with its legs extended and patagium outstretched, gliding in a descending curve towards another tree. As the squirrel approaches its landing, it flips up its tail and holds its body back to slow down for a safe landing. In Utah, northern flying squirrels primarily live in mature coniferous forests and riparian zones. Flying squirrels eat various nuts, fungi, berries, seeds, lichens, insects and sometimes the eggs of songbirds. Good tree cover is needed to enable flying squirrels to glide between trees. Older trees and snags supply the hollow cavities necessary for nesting sites. Northern flying squirrels are nocturnal. To help them see well in the darkness of night, they have especially large eyes. During the day they hide away in their nests.

For more information about wildlife that live in Utah's mountain forests, visit the Project WILD Web site at wildlife.utah.gov/projectwild/magazine. Free resources, activities, literature connections and a list of websites for educators and youth related to this article can also be viewed at the site. If you are unable to access the Internet, contact Project WILD at (801) 538-4719 or e-mail DianaVos@utah.gov to obtain the additional information that is available online.

Getting WILD!

Utah's WILD Notebook is produced by Utah's Project WILD program. WILD workshops, offered by the Utah Division of Wildlife Resources, provide teachers and other educators with opportunities for professional development and a wealth of wildlife education activities and materials for helping students learn about wildlife and its conservation. For a current listing of Project WILD educator workshops, visit the Project WILD Web site at wildlife.utah.gov/projectwild or e-mail DianaVos@utah.gov.

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